

# Collembola of the Central Region of the Ou Mountains, Northeast Japan II. A New Species of the Subgenus *Ceratophysella* from Mt. Yakeishi (Hypogastruridae: *Hypogastrura*)

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**Abstract** A new collembolan species of the subgenus *Ceratophysella* of the genus *Hypogastrura* was found at a beech forest half-way on the south slope of Mt. Yakeishi, southwest Iwate Prefecture, northeast Japan: *Hypogastrura* (*Ceratophysella*) *ateruii* sp. nov. It is easily separable from other consubgeneric species by possessing conspicuous serrate spiny setae on head and Th. II to Abd. III.

**Key words:** Collembola, *Ceratophysella*, new species, Mt. Yakeishi

This study is the second report on Collembola of the central region of the Ou Mountains (see TAMURA, 2001). The subgenus *Ceratophysella* BÖRNER, 1932 of the genus *Hypogastrura* BOURLET, 1839 is cosmopolitan, containing about 100 species at present in the world (see HOPKIN, 1997) and 11 species of the subgenus have so far been known from Japan (Workshop on Collembola, 2000). The chaetal designation of the body is after YOSHII (1956, 1960). The present specimens were extracted from soil samples into 80% ethanol through Tullgren funnels and mounted in slides with Hoyer's solution. Morphologies were all examined under a phase-contrast microscope.

## Description

*Hypogastrura* (*Ceratophysella*) *ateruii* sp. nov.  
(Figs. 1–14)

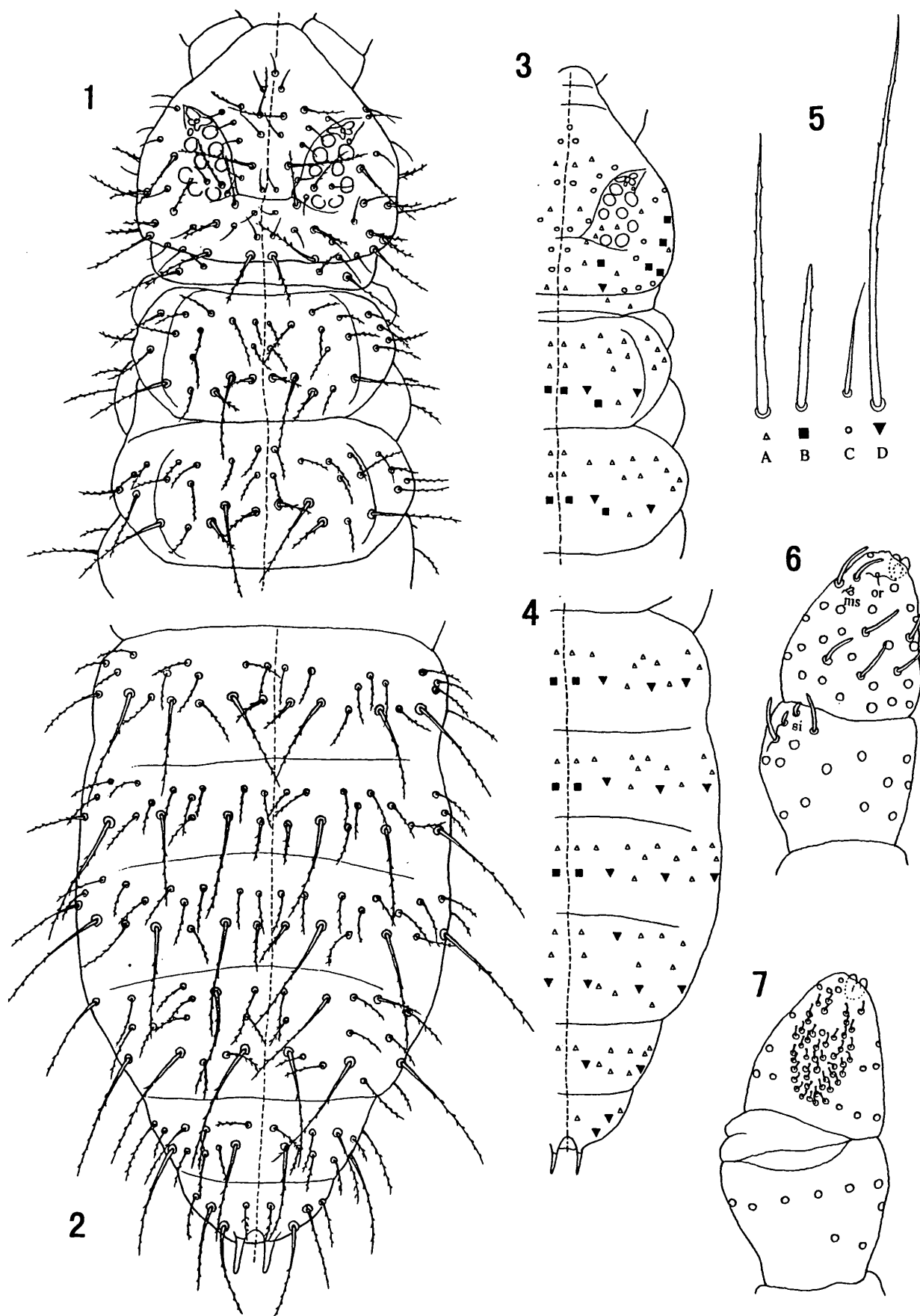
Body length 1,030–1,300 µm, Color entirely purple, but paler on intersegmental portion.

**Chaetotaxy:** Body setae consisting of four types of chaetae (Fig. 5); 1) long serrate setae in a few pairs on each body segment (hereinafter referred to as *long seta*), 2) moderately long serrate setae commonest on whole body (*moderate seta*), 3) short serrate and conspicuously stout spiny setae on head and Th. II to Abd. III (*spiny seta*) and 4) simple short setae without serration on head (*simple seta*). These setae dorsally arranged as in Figs.

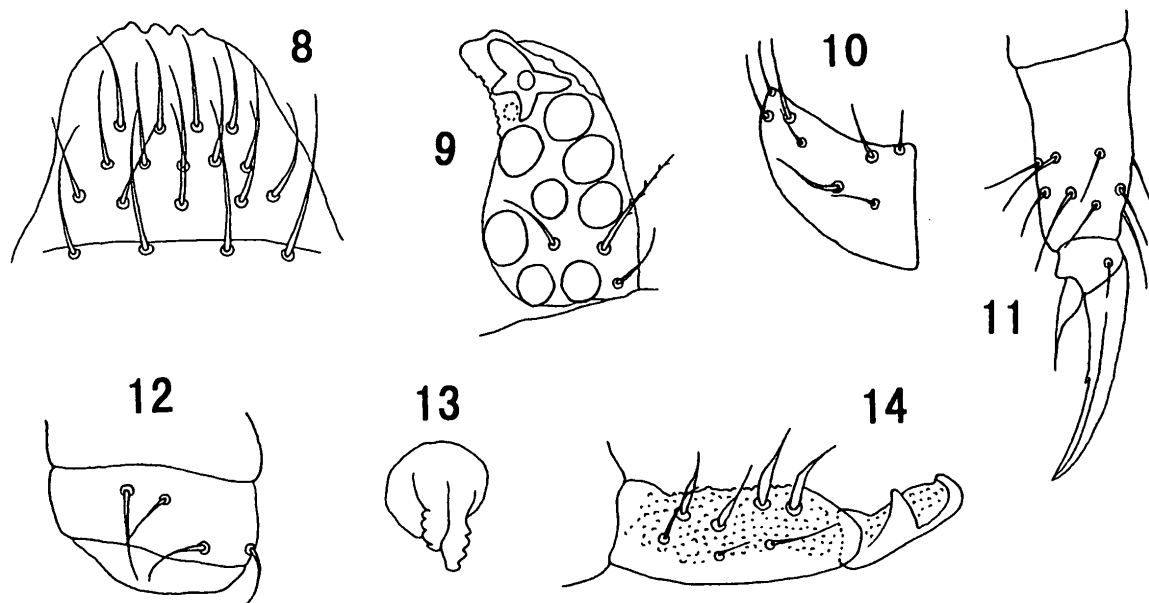
1, 2, 3 and 4. Head with 5 pairs of *spiny setae* on genal and occipital areas. Th. I with 2 + 2 setae. Th. II and III composed of 3 rows of setae, lacking  $m_2$  and  $m_3$ , with *spiny setae* on  $p_1$ ,  $p_3$  and *long setae* on  $p_2$ ,  $p_5$ . Abd. I–III with 2 rows of setae; *spiny setae* on  $p_1$  and *long setae* on  $p_2$ ,  $p_4$ ,  $p_6$ . Abd. IV covered with 3 rows of setae without  $a_2$ , lacking *spiny setae*; *long setae* on  $a_3$ ,  $p_1$ ,  $p_4$ ,  $p_6$ . Abd. V with 2 rows of setae, lacking *spiny setae*; *long setae* on  $p_1$ ,  $p_5$ . Abd. VI with 2 rows of setae, of which  $a_3$  and  $p_2$  are long.

**Head:** Head length 220 µm in holotype. Antenna nearly as long as head diagonal; length ratio of antennal segments I:II:III:IV as 1:1.2:1.5:1.8. Ant. IV apically with 3-lobed sensory papilla; dorsally with an organite “or”, a microsensilla “ms” and 7 blunt setae; ventrally with about 50 small peg-like setae (Fig. 6). Between Ant. III and IV there existing a quite distinct eversible sac (Fig. 7). Ant. III apically with 2 bent short sensory rods and 2 guard sensilla (Fig. 7). Ant. III, II and I covered with 20, 12 and 6 setae, respectively. Postantennal organ (PAO) composed of 4 tubercles and an accessory tubercle, about 2 times as long as diameter of nearest eye (Figs. 1, 3 and 9). Eyes 8 + 8; eye patch with 3 setae of which seta  $oc_1$  is serrate (Fig. 9). Labral setae as 4/5,5,4 (Fig. 8). Labial triangle covered with 8 setae on each half (Fig. 10).

**Thorax:** Hind unguis 58 µm in holotype, with an inner



Figs. 1-7. *Hypogastrura (Ceratophysella) ateruii* sp. nov. 1. chaetotaxy on head to Th. III; 2. ditto on Abd. I-VI; 3. schematic presentation of chaetal arrangement on head and Th. I-III; 4. ditto on Abd. I-VI; 5. 4 types of body setae: A = moderate seta, B = spiny seta, C = simple setae, D = long seta; 6. Ant. III and IV showing sensory setae, dorsal; 7. ditto, ventral.



**Figs. 8–14.** *Hypogastrura (Ceratophysella) aterui* sp. nov. 8. labral setae; 9. PAO and eyes; 10. labial triangle; 11. tip of hind leg; 12. ventral tube; 13. tenaculum; 14. dens and mucro.

tooth at halfway; unguiculus tapering at apex, with a basal lamella, about half as long as unguis; clavate tenent hair absent (Fig. 11).

**Abdomen:** Ventral tube with 4 + 4 setae of which posterior one is longest (Fig. 12). Tenaculum with 4 + 4 barbs, without setae (Fig. 13). Dens 72  $\mu$ m in holotype, with 7 dorsal setae of which inner 4 setae are basally broad; mucro 0.6 times as long as dens, with an outer lamella (Fig. 14). Anal spines slender and longer (Fig. 2), being 0.7 and 1.2 in ratio to unguis and mucro, respectively. On Abd. V, distance between posteromedian setae ( $p_1$ ) 1.7 times longer than that between anteromedian setae ( $a_1$ ); numbers of granules between  $p_1$ – $p_1$  and between  $p_1$  and posterior margin of Abd. V tergite 19 or 20 and 16 or 17, respectively.

**Holotype:** Litter layer of a beech forest (*Fagus crenata* BLUME), the forest floor densely covered with *Sasa kurilensis* MAKINO et SHIBATA, near Ginmeisui Spring, 1,100 m a.s.l., on the south slope of Mt. Yakeishi, its summit being 1,548 m a.s.l., Isawa, southwest Iwate Pref., northeast Japan, 15-X-1999, H. TAMURA leg. **Paratype:** Two, same data as for holotype. Holotype is deposited in Iwate Prefectural Museum in Morioka and a paratype is in Aomori Prefectural Museum in Aomori. The remaining one paratype is put in my collection. All the type specimens are mounted in slides.

**Remarks:** This species is allied to *H. (C.) armata*

(NICOLET, 1841) in general chaetotaxy, but it is easily separable from the latter as well as other consubgeneric species in having conspicuous serrate spiny setae on genal and occipital areas of head, at  $p_1$  and  $p_2$  positions on Th. II and III and at  $p_1$  position on Abd. I–III.

**Etymology:** This species is named in honor of “ATERUI”, who was a distinguished chieftain of the Hitakami district, as the present Isawa district with Mt. Yakeishi was called 1,200 years ago.

### Acknowledgment

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### 摘要

田村浩志 (〒029-4504 岩手県胆沢郡金ヶ崎町永沢鳥ノ海上 100) :  
奥羽山脈中央部のトビムシ II. 焼石岳から得られたムラサキトビムシ属フクロムラサキトビ亜属の一新種。

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奥羽山脈焼石岳から得られたムラサキトビムシ属フクロムラサキトビ亜属の一新種を *Hypogastrura (Ceratophysella) aterui* sp. nov. と命名し記載した。この新種は頭部の genal and occipital areas と Th. II–Abd. III の背部に鋸歯のある短い棘状毛を有することで同亜属の他種と容易に区別される。

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